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EXAMINER	
HOLLIDAY, JAIME MICHELE	
ART UNIT	**PAPER NUMBER**
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/748,665	BEN-YEHUDA ET AL.	
	Examiner	Art Unit	
	Jaime M. Holliday	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Arguments

1. Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

2. The indicated allowability of claims 8-16 is withdrawn in view of the newly discovered reference(s) to Bircher et al., Lim et al. and Becker et al. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. **Claims 1-3, 7-10, 12, 15, 17, 19, 20, 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Birchler et al. (US 6,161,015)** in view of **Lim et al. (US 2003/0117996 A1)**, and in further view of **Becker et al. (US 6,917,814 B2)**.

Consider **claims 1, 8, 15, 17 and 20**, Birchler et al. clearly show and disclose that when communication **116** is established with the communication unit **128** in the first cell **112** and the communication unit receives a first neighbor cell list **200** related to the first cell **112**, reading on the claimed "method (apparatus; system; article of manufacture) comprising in a non-idle state of a

wireless communication device, receiving from a base station a signal representing a list of cells," (col. 3 lines 32-36). The cell of cell site **114**, which is providing communication for the communication unit, is the serving cell while it provides this communication. The communication unit moves toward the edge of the service coverage area of serving cell, the communication unit may send a new cell request signal **130** to cell site. The communication unit is continuously making signal quality estimate (SQE) and received signal strength indication (RSSI) measurements of the serving cell communication channel and the channels of the neighbor cells, as contained in the list, reading on the claimed "in an idle state of said wireless communication device: determining whether the list of cells includes an identification of one or more neighboring cells of said wireless communications device; if the list includes an identification of one or more neighboring cells of said wireless communication device, searching for neighbor cells by operating the Radio frequency receiver to scan one or more selected (SYNC) channels," (col. 3 line 60- col. 4 line 4). The communication unit based on signal quality measurements determines that a hand-off is needed and requests a hand-off from the serving cell to another cell. Upon receiving a denial to hand-off to another cell, the communication unit continues making signal quality measurements of the outbound channels of serving cell and neighbor cell list. The communication unit continues comparing signal quality measurements of the serving cell and at least one other cell until the difference between the signal quality measurements of the serving cell and another cell reaches a

neighbor cell list update threshold. When this neighbor cell list update threshold is reached, communication unit 128 has determined a new neighbor cell list is needed. The FNE via cell site sends a neighbor cell list **300** related to the second cell **134** to the communication unit. Communication unit, then, receives this second neighbor cell list. A new neighbor cell list would provide such a communication unit new hand-off candidates to which a hand-off may be granted, reading on the claimed "if the list does not include an identification of one or more neighboring cells of the wireless communication device, searching for neighboring cells by operating a Radio Frequency receiver to scan one or more channels," (col. 4 lines 36-42, col. 5 lines 13-35). It is obvious that the communication unit would scan the new neighbor list to continue the handoff process as known in the art.

However, Bircher et al. fail to specifically disclose that the communication unit searches the old and new neighbor list in different search periods.

In the same field of endeavor, Becker et al. clearly show and disclose a method and a mobile station for reporting multi-path signals based on a report window are described herein. The mobile station may observe multi-path signals during a search period. In a code division multiple access (CDMA) based communication system, for example, the search period may be one full slot, i.e., two-thirds of a millisecond (2/3 msec). Accordingly, the mobile station may determine a distribution of a plurality of multi-path signals observed by the mobile station during the search period. In particular, the mobile station may determine

an energy parameter and a position parameter to generate an energy/position pair associated with each of the plurality of multi-path signals. Based on the distribution of the plurality of multi-path signals, the mobile station may determine a report window to report a predetermined number of energy/position pairs (N) for a current search. For example, the mobile station may determine a search period (SP) for a prior search, and an interval (T) associated with the predetermined number of energy/position pairs (N). That is, the mobile station may observe the predetermined number of energy/position pairs (N) within the interval (T) during the search period (SP) for the prior search. To avoid reporting duplicate multi-path signals from the prior search, the mobile station may subtract the interval (T) from the search period (SP) for the prior search to determine the report window (W) for the current search. The search period (SP) for the prior search may be, but is not limited to, one full slot (S). Thus, the report window (W) may be the difference between one full slot (S) and the interval (T). Alternatively, the report window may be, but is not limited to, a fraction of one full slot (S), i.e., S/n, wherein n is a whole number, reading on the claimed "searching for neighbor cells by operating a Radio Frequency receiver to scan one or more channels during a first period; and a second period," (col. 2 lines 33-63).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have multiple search windows that decrease as taught by Becker et al. in the method of Birchler et al., in order to aid in performing handoffs.

However, Birchler et al., as modified by Becker et al., specifically fail to disclose that an offline multi-path search is performed.

In the same field of endeavor, Lim et al. clearly show and disclose a method of increasing the waiting time of a mobile terminal by reducing power consumption for a cell search in a discontinuous reception mode (abstract). After the mobile terminal wakes up from sleep, it supplies power to an RF module in. The mobile terminal determines whether a cell search is to be performed. If a cell search is to be performed, the mobile terminal performs the first cell search step, that is, slot timing synchronization. The mobile terminal determines whether a neighbor list has been received from a serving Node B. Upon receipt of the neighbor list, the mobile terminal provides a buffering indication signal to the memory **103** and the memory buffers data received from N Node B in the neighbor list. The mobile terminal turns off the RF module and performs an offline cell search, reading on the claimed "performing an offline multi-path search for one or more neighboring base stations after the search period expires," (paragraph 25).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to perform a search of a neighbor list when the mobile receiver is powered down as taught by Becker et al. in the method of Birchler et al., as modified by Becker et al., in order to aid in cell selection and conserve battery power.

Consider **claims 2 and 9**, the combination of Birchler et al. and Becker et al., as modified by Lim et al., clearly show and disclose the claimed invention **as applied to claims 1 and 8 above**, respectively, and in addition, Birchler et al. further disclose that the communication unit is continuously making signal quality estimate (SQE) and received signal strength indication (RSSI) measurements of the serving cell communication channel and the channels of the neighbor cells, as contained in the list, reading on the claimed "performing a base station identification procedure during at least one of the first and second search periods; controller is capable of scanning a set of SYNC channels for further base stations," (col. 3 line 60- col. 4 line 4).

Consider **claims 3, 10, 16 and 18**, the combination of Birchler et al. and Becker et al., as modified by Lim et al., clearly show and disclose the claimed invention **as applied to claims 1, 9, 15 and 17 above**, respectively, and in addition, Becker et al. clearly show and disclose a method and a mobile station for reporting multi-path signals based on a report window are described herein. The mobile station may observe multi-path signals during a search period. In a code division multiple access (CDMA) based communication system, for example, the search period may be one full slot, i.e., two-thirds of a millisecond (2/3 msec). Accordingly, the mobile station may determine a distribution of a plurality of multi-path signals observed by the mobile station during the search period. In particular, the mobile station may determine an energy parameter and a position parameter to generate an energy/position pair associated with each of

the plurality of multi-path signals. Based on the distribution of the plurality of multi-path signals, the mobile station may determine a report window to report a predetermined number of energy/position pairs (N) for a current search. For example, the mobile station may determine a search period (SP) for a prior search, and an interval (T) associated with the predetermined number of energy/position pairs (N). That is, the mobile station may observe the predetermined number of energy/position pairs (N) within the interval (T) during the search period (SP) for the prior search. To avoid reporting duplicate multi-path signals from the prior search, the mobile station may subtract the interval (T) from the search period (SP) for the prior search to determine the report window (W) for the current search. The search period (SP) for the prior search may be, but is not limited to, one full slot (S). Thus, the report window (W) may be the difference between one full slot (S) and the interval (T). Alternatively, the report window may be, but is not limited to, a fraction of one full slot (S), i.e., S/n, wherein n is a whole number, reading on the claimed "in the idle state of said wireless communication device, if a first time interval has passed, performing a first type of base station identification

procedure by searching for one or more previously-identified base stations of neighboring cells, and if a second time interval, which is longer than said first time interval, has passed, performing a base station identification procedure," (col. 2 lines 33-63).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have multiple search windows that decrease as taught by Becker et al. in the method of Birchler et al., in order to aid in performing handoffs.

However, Birchler et al., as modified by Becker et al., specifically fail to disclose that more than one base station identification procedure is performed.

In the same field of endeavor, Lim et al. clearly show and disclose a method of increasing the waiting time of a mobile terminal by reducing power consumption for a cell search in a discontinuous reception mode (abstract). After the mobile terminal wakes up from sleep, it supplies power to an RF module in. The mobile terminal determines whether a cell search is to be performed. If a cell search is to be performed, the mobile terminal performs the first cell search step, that is, slot timing synchronization. The mobile terminal determines whether a neighbor list has been received from a serving Node B. Upon receipt of the neighbor list, the mobile terminal provides a buffering indication signal to the memory **103** and the memory buffers data received from N Node B in the neighbor list. The mobile terminal turns off the RF module and performs an offline cell search, reading on the claimed "performing a second type of base station identification procedure by searching for one or more base stations that have not been previously identified, for a second time period," (paragraph 25).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to perform a search of a neighbor list when the mobile receiver is powered down as taught by Lim et al. in the method of Birchler et al., as modified by Becker et al., in order to aid in cell selection and conserve battery power.

Consider **claims 7, 12 and 19**, the combination of Birchler et al. and Becker et al., as modified by Lim et al., clearly show and disclose the claimed invention **as applied to claims 1, 8 and 17 above**, respectively, and in addition, Birchler et al. further disclose that the communication unit moves toward the edge of the service coverage area of serving cell, the communication unit may send a new cell request signal **130** to cell site. The communication unit is continuously making signal quality estimate (SQE) and received signal strength indication (RSSI) measurements of the serving cell communication channel and the channels of the neighbor cells, as contained in the list, reading on the claimed "searching for neighboring cells in the idle state if it is determined that a value of a signal quality indicator of a signal received from an identified base station is lower than a predetermined threshold," (col. 3 line 60- col. 4 line 4).

Consider **claim 22**, the combination of Birchler et al. and Becker et al., as modified by Lim et al., clearly show and disclose the claimed invention **as applied to claim 20 above**, respectively, and in addition, Lim et al. further disclose that upon receipt of the neighbor list, the mobile terminal provides a buffering indication signal to the memory and the memory buffers data received

from N Node in the neighbor list, reading on the claimed "executing said multi-path search over a buffer of recorded samples," (paragraph 25).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to perform a search of a neighbor list when the mobile receiver is powered down as taught by Lim et al. in the method of Birchler et al., as modified by Becker et al., in order to aid in cell selection and conserve battery power.

5. **Claims 4, 5, 6, 11, 13, 14 and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of **Birchler et al. (US 6,161,015)** and **Lim et al. (US 2003/0117996 A1)** in view of **Becker et al. (US 6,917,814 B2)**, and in further view of **Bourk et al. (U.S. Patent 6,259,916 B1)**.

Consider **claims 4, 11 and 23**, and **as applied to claims 3, 8 and 20 above**, respectively, the combination of Birchler et al. and Lim et al., as modified by Becker et al., clearly show and disclose the claimed invention except that extended base station procedure is done.

In the same field of endeavor, Bourk et al. clearly show and disclose a method for reducing the perceptible impact to user traffic during a hand-off process in a full duplex wireless system communications system having subscriber units and base stations (abstract). Monitoring for a long time interval may increase the probability that the determination (transmission quality is adequate) is applicable, reading on the claimed "base station identification

procedure for a second time period comprises performing an extended base station identification procedure," (column 5 lines 52-56).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use long time intervals to determine the quality of the signal between the subscriber unit and the serving base station as taught by Bourk et al. in the method of Birchler et al. and Lim et al., as modified by Becker et al., in order to improve the handoff process.

Consider **claims 5 and 13**, and **as applied to claims 3 and 8 above**, respectively, the combination of Birchler et al. and Lim et al., as modified by Becker et al., clearly show and disclose the claimed invention except determining if a signal quality is adequate during a first interval.

In the same field of endeavor, Bourk et al. clearly show and disclose a method for reducing the perceptible impact to user traffic during a hand-off process in a full duplex wireless system communications system having subscriber units and base stations (abstract). Monitoring other base stations, because the signal from the present base station may degrade rapidly depending on the physical location of the base station and position of the subscriber unit. When the link has degraded and monitoring is more urgent, the criteria (time interval) should be relaxed (reduced). When the link performance becomes severely degraded, the subscriber unit may shorten the interval further to a time interval T3>T2, reading on the claimed "determining at an initial time interval, the initial time interval being shorter than said first time interval, if a signal received

from at least one other base station in a list of identified base stations is received according to an adequate quality at said communications device, and, if said at least one other signal of adequate quality is not received by said communications device, performing a base station identification procedure," (column 5 line 61-column 6 line 2).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to shorten the time intervals used to determine the quality of the signal between the subscriber unit and the serving base station when communication is rapidly degrading as taught by Bourk et al. in the method of Birchler et al. and Lim et al., as modified by Becker et al., in order to improve the handoff process.

Consider **claims 6 and 14**, the combination of Birchler et al. and Lim et al., as modified by Becker et al. and Bourk et al., clearly show and disclose the claimed invention **as applied to claims 5 and 13 above**, respectively, and in addition, Bourke et al. further disclose monitoring other base stations (when time interval>T1), because the signal from the present base station may degrade rapidly, reading on the claimed "performing a base station identification procedure for a third search period, which is shorter than the second search period (comprises performing a limited base station identification procedure)," (column 5 lines 61-63).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to limit time intervals used to determine

the quality of the signal between the subscriber unit and the serving base station when communication is rapidly degrading as taught by Bourk et al. in the method of the combination of Birchler et al. and Lim et al., as modified by Becker et al., in order to improve the handoff process.

6. **Claims 21 and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of **Birchler et al. (US 6,161,015)** and **Lim et al. (US 2003/0117996 A1)** in view of **Becker et al. (US 6,917,814 B2)**, and in further view of **Edlis et al. (US 2001/0028674 A1)**.

Consider **claims 21 and 24**, and **as applied to claim 20 above**, the combination of Birchler et al. and Lim et al., as modified by Edlis et al., clearly show and disclose the claimed invention except that if the multi-path search does not meet a criterion, then another base station procedure is performed.

In the same field of endeavor, Edlis et al. clearly show and disclose a method including searching for a pilot signal of a second communications system while substantially simultaneously being in communication with a first communications system (abstract). Mobile station **102** may be in communication with the first communications system **106** as long as mobile station is in the preferred receiving range of the base station **104** of the first communications system. During this time, signals may also be received from other communications sources, such as from the second communications system **110**. Accordingly, it may be desired or required to search for communication signals

from second communications system **110**. The searching may be carried out by first recording a portion of the signal received from the second communications system and background processing the portion of the signal, also referred to as offline processing in order to acquire a communication channel at the second communication system. If a CDMA pilot signal is found and acquired, then mobile station may be switched to receiving signals from the second communications system, meaning that communication is handed off from the first communications system 106 to the second communications system. If no CDMA pilot signal is found, then mobile station may remain in a communication with the first communications system, reading on the claimed "if a result of said multi-path search does not meet a selected criterion, performing a base station identification procedure (performing a multi-path search; evaluating the results of said multi-path search; and if signals being received to said wireless communication device do not meet pre-selected criteria: performing a base station identification procedure," (fig. 2, paragraphs 22-25).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to process recorded signals offline to determine a handoff as taught by Edlis et al. in the method of the combination of Birchler et al. and Lim et al., as modified by Becker et al., in order to improve the handoff process.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaime M. Holliday whose telephone number is (571) 272-8618. The examiner can normally be reached on Monday through Friday 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on (571) 272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jaime Holliday

Patent Examiner

JOSEPH FEILD
SUPERVISORY PATENT EXAMINER